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A CLINICAL CASE WHICH ILLUSTRATES THE BENEFICIAL RESULTS THAT MAY FOLLOW AN UNSUCCESSFUL ATTEMPT TO REMOVE THE UTERINE APPENDAGES.*

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In October last, during my term of service at the Hahnemann Hospital, there came under my care a domestic servant, aged thirty-five years, married, suffering from chronic pelvic cellulitis. The uterus was firmly fixed by adhesions, the ovaries and tubes enlarged, and very sensitive to pressure, and the suffering so constant and severe as to prevent standing erect, and to confine the patient to her bed much of the time. Other means of treatment had been tried, I believe faithfully, before I saw the case, but without benefit. My proposal to operate was gladly assented to. I therefore, with antiseptic precautions, opened the abdomen for the purpose of removing the appendages. The adhesions exceeded anything that I have ever encountered. Uterus, ovaries, tubes, intestines, and bladder formed a solid mass through which the left ureter passed, the whole so firmly adherent to the pelvis that no part of it could be raised. Quite strangely there were but few anterior adhesions. I made an attempt to break up the adhesions on the left side, thinking that I could with more success work from within the pelvis, lifting the mass as separated and turning it out upon the abdominal walls as we sometimes turn out the intestines to gain space and control hemorrhage. But this method was soon abandoned, and any

* Read before the New York State Homœopathic Medical Society.

further operation seemed to be useless, especially as the patient, who before the operation was much reduced, began to show symptoms of collapse. It was therefore decided to desist from further manipulations. I closed the abdomen, using for that purpose the Hagedorn needles, which I consider superior to any others. The dressing was not disturbed until the eighth day, when the wound was found to be healed by first intention.

The subsequent history of this case is one of improvement. After the operation, menstruation, which had been recurring every two weeks, did not appear until the sixth week. The ovarian pain entirely disappeared for several weeks, and then returned for a short time only, but with nothing like its former severity. The patient gained in strength, and in every respect seemed greatly improved by the incomplete operation. At the time she left the hospital, a short time after Christmas, she was a comparatively well woman.

From looking over the literature of incomplete operations for the removal of the uterine appendages I conclude that the results obtained in this case are not exceptional, but they are none the less remarkable, from pathological and therapeutical standpoints. I can form only one theory that approaches a satisfactory explanation of such cases, and this I am free to confess is far from fully meeting scientific requirements. I refer to the changes in the pelvic circulation which are probably induced by the manipulation necessary to determine whether the appendages can be removed. It is probable that much of the pain of pelvic cellulitis results from imperfect blood circulation; especially will this be true, when suppuration does not complicate the case. Adhesions are not painful when they become fully organized, unless congested or drawn upon. Congestion, blood stasis, are almost certain features of chronic pelvic peritonitis, and if this can be relieved, benefit is quite sure to follow. When we open the abdomen and disturb the relation of the congested organs and tissues, we set up a kind and degree of counter-irritation, which I

am led to believe is followed by relief of the local blood stasis. The same result, though in a less degree, follows applications to the vaginal vault. This can accomplish much in reducing pelvic congestion, but not as much as can be brought about by manipulation of the diseased tissues through an abdominal incision. I do not wish to advocate incomplete operations as a meams of treating pelvic cellulitis; all I desire to advance is that because an operation must be incomplete it is not of necessity useless, but may be followed by truly curative results.

NUTRITION OF INFANTS, CHILDREN, AND YOUTH.

W. I. Thayer, D.D.S., M.D., Brooklyn, N. Y.

On May 8th last past there was a discussion before the American Medical Association, at Cincinnati, upon diseases of children and the "best food for babies!"

In supplying pabulum to babies and children there are some features that are frequently lost sight of. Wilson enumerates seventeen different textures of the body, and for some reason forgets—perhaps—to mention three other very important ones, found in the oral cavity. The facts are, that the medical profession have almost entirely ignored three of the most important tissues of the body.

One of the conclusions arrived at in the above Association was: That there was no good substitute for mother's milk.

This is denied!

But, if and provided, the mother can be in the very best possible physiological condition, then the position taken by the Association stands immutable. Not otherwise!

How many mothers come up in a reasonable degree to this standard? Few!

The Association also claim that "There is great danger from

early weaning." There is no question about the truth of this fact, but it is quite as pertinent to inquire: How many mothers have been prematurely and permanently broken down by too long maternal nursing?

The second conclusion arrived at, was: In case of absolute inability of the mother, a wet-nurse should be procured. The experience of many families has been that they have found such assistants to be a very independent wet nuisance! In cases of such substitution, does the busy practitioner take the trouble to know, that there is no syphilitic taint, that the dental organs are sound and of a given dense texture, and that there is no miasm or peculiar hereditary or previous injurious environments? If so, well and good; as thorough and rigid an examination should be made of a proposed wet nurse, as a railroad corporation would make of its candidates for various positions.

There is no question, but that human milk, if it comes up to a reasonably high standard, is the best and most suitable food for an infant under fifteen months.

"No good substitute for mother's milk," can be found in cow's milk for very young children—infants. The latter contains a very tough casein that is unyielding to the feeble digestion of an infant. They can not uniformly dispose of it. It forms an insoluble coagulum that goes rasping down through the intestinal tract, removing the epithelium and establishing blennorrhœa, entero-colitis and exhausting diarrhœa. This kind of milk would be a good substitute if its tough casein could be partly pre-digested with pancreatine. But what mother or nurse has the time or patience to perform this operation. Too much digestion of the milk would make it bitter, and a partial digestion, not up to the standard, would disarrange the child's digestive apparatus, alternating constipation and diarrhœa, a very dangerous trifling.

The three important tissues referred to are found in the teeth.

The enamel, dentine and cementum. These tissues are important, because they are among the first that go to prepare the food for the body of all except infants. These three petrous tissues assist in articulation of speech. They prevent the absorption—when in normal condition—of the alveoli, thereby maintaining the contour of the features,—a very important matter.

But teeth decay and waste away much more rapidly to-day than they did fifty years ago. The reason for this is because they have been starved out of existence!

These petrous tissues are composed of soft-solids and calcareous salts. The nitrogenous substances and water that is found in almost all food has kept the soft-solids quite well supplied, but the inorganic constituents of tooth structure have been prevented from a normal deposit between the interstices of the protoplasma, by being shut off in food supply, and the result has been soft, frail, and rapidly decaying teeth! Not one child in a hundred, ten years of age, that can exhibit four—or two, sound six year molars; not one!

The teeth require nutrient matter—the calcareous salts—when, and at the time they are forming. They commence to form as early as the sixth week of intra-uterine existence. From that time up to the full eruption of the wisdom teeth they should have a liberal supply of lime salts, not in the form of lime water, but in a special form of food, that the Almighty has prepared in his universal laboratory. In the cereal foods.

But these foods have been rendered nugatory by bolting out all their calcareous matter. It is the outside of all our cereal foods that are rich in the carbonate and phosphate of lime, and put into such a peculiar condition as to be easily digested, and easily appropriated. It's the only food in existence, that can supply the rightly balanced adjustment of calcareous salts, that can be easily laid hold upon, and appropriated, by these starved tissues.

The expectant mother should eat three times a day of bread foods

that have been constructed out of the meal product of the cereals that are used. Through the umbilical cord, mammary gland, or in a rightly balanced and easily digesting artificial food for infants, can the inorganic constituents of an enduring tooth structure be furnished. But if the mother does not eat, or the nurse partake, and the artificial food is not well supplied with the calcareous matter, all, or any of these deficiencies will only too plainly show themselves, in the unfortunate being who has been deprived of such a supply of the calcareous salts.

Graham bread, rye and indian bread, oat meal, corn meal as hasty pudding, Indian pudding. Wheat should be ground very fine but left un-bolted ! Bolt none of the cereal foods ! Partake only of their meal products.

The teeth contain ten times more of the phosphate of lime than of the carbonate. The outside of any of our grains is one of the best curatives in constipation and the best prophylactic. This kind of food as a parturifacient will make unnecessary the use of spurred rye, or other forcing agent, because there will be no atony to contend with, if not artificially produced by drugs.

Our learned friends have claimed, " that there was no good substitute for mother's milk." This we as strenuously and emphatically deny, and will attempt to prove.

There are eight kinds of infant artificial foods ; and some of them are more than fifty, if not seventy per cent. better than indifferently fed human milk. Better, in that they will the more perfectly supply every growing tissue, and will deliver to the petrous tissue a much greater per cent. of neded pabulum, than most mothers or nurses generally furnish.

Three of these foods are what are known as milk foods, in which the tough casein has been partly pre-digested, and the wheat that enters into their construction has been converted, or should be, into dextrine. These three milk foods are Nestle's, Anglo-swiss and Carnrick's Soluble Food.

The first contains 11.46 per cent. of albuminoid or nitrogenous matter, for general tissue building ; 1.75 per cent. of the lime salts ; and its ease of digestion is 11.09. Anglo-Swiss Food has of the proteins 12.38 per cent. ; lime salt 1.95, and ease of digestion 11.20 per cent. In the third food, the proportion of nitrogenous matter is as high as 18.22 ; its lime salts are 2.991, and ease of digestion 16.45 per cent.

Horlick's and Mellin's foods, are malt foods. Maltose is quite as liable to ferment in an infant's stomach before, it reaches the duodenum, as is cane sugar. Yet there is much less trouble of disposing of malt than the starches. Horlick's food has of the albuminoids 11.30 per cent., salts 2.76, digestion 10.85. Mellin's food contains of nitrogenous matter 8.34, and ease of digestion 7.38.

Starches. Of the starch foods is Wells, Richardson & Co's, whose proteins are 9.05, inorganic salts 2.26, digestion 8.35. Dr. Ridge's food contains of nitrogenous matter 8.76, salts as low as 0.48, digestion 7.97. The albuminoids in Imperial Granum are 10.73 per cent, tooth building material 0.37, and digestion 9.55.

An infant food containing raw starch will be found to be indigestible, rasping and scraping the intestinal tract, cutting, like casein, both ways. The starch in such food should be converted into dextrine, by being baked for some eight hours, or more, at a temperature of 350° Fahrenheit. Dextrine is not disturbed until it reaches the amyolytic ferments found in the pancreatic and intestinal juices, which rapidly convert it into a very soluble sugar,—malt sugar—maltose—which is speedily absorbed and carried into the circulation, beyond the possibility of its being converted into a vinous ferment, as malts are so liable to be when brought in contact with the acids found in the stomach.

From no small experience, I am convinced that a well balanced artificial food for infants is vastly superior to indifferent maternal nursing ; and if the manufacturer is honest and will partly pre-

digest the tough casein in the cow's milk used, and will convert all the raw starches into dextrine instead of malt or maltose, then we can have an artificial food that will nutrify every tissue, especially the teeth, and be of exceeding easy digestion.

CARCINOMA OF THE PANCREAS, SPLEEN AND STOMACH.*

History and Autopsy by P. L. CARTER, M.D., House Physician.
W. STORM WHITE, M.D., Pathologist.

History: Mrs. C.— Irish, age 65, admitted 11th May, 1888.—Did not give any family history of phthisis or cancer. Strong and healthy as a child, always worked hard, was married for fifteen years, never had any children, did not drink, was always well provided for. The present trouble began (5) five or (6) weeks ago, the stomach would swell at times, and there was a sore spot in the region of the spleen, pain across kidneys; when resting on one side must turn over to get relief, loose, rattling cough, little expectoration, worse at night.

Present Condition: Irregular heart which intermits every sixth or seventh beat, mucous râles heard all over the chest. Through the abdominal parieties, below the stomach and a little to the left of the median line, an enlarged nodulated spleen could be mapped out. Appetite good, eats bread, beef-tea, gruel, rice, milk, not any meat, bowels loose for the first few days,

AUTOPSY, 22d MAY, 1888.

Body: Emaciated and showing decided cachexia, rigor mortis not well marked.

Lungs: Twenty ounces of serous fluid was taken out of the right pleural cavity, and thirty-two ounces out of the left; both lungs were bound down at apex and posterior surface by pleuritic adhesions; weight of right, 20 ozs., of left, 14 ozs.; right lung some-

* Homœopathic Hospital, Ward's Island, N. Y.

what compressed, lacking the normal crepitus, slightly congested, œdematous, and emphysematous; evidences of chronic catarrhal bronchitis throughout, the finer bronchial tubes being clogged with mucus; left same as right, but in a more marked degree.

Heart: About normal in size and consistency, aortic valve presented marked calcareous plates and granulations of two of its cusps; the coronary arteries were distended, tortuous, and had atheromatous and calcareous plates throughout the whole of their superficial courses; the tricuspid valve had marked shortening and thickening of its cusps; elongated chordæ tendineæ, but the papillary muscles were not hypertrophied, nor was the cardiac muscularis; the visceral pericardium presented a marked œdematous infiltration. especially along the inter-ventricular and auriculo-ventricular grooves; quite a large ante-mortem clot in left ventricle; the *foramen ovale* not closed, could easily pass a lead pencil through the opening.

Stomach, Spleen and Pancreas: Could not be separated because of the tumor developed in the last; after emptying the stomach, and ligaturing, the weight of the three combined was found to be 4½ lbs., the spleen and pancreas being many times their normal size and weight. The tumor proved to be primary carcinoma of the pancreas, with extensive and numerous developments in the spleen, and scanty ones in both the serosa and mucosa of the stomach. A section being made through the tumor the spleen substance was found to be a cancerous mass, thick with calcareous deposits.

Liver: No secondary growths in the liver, first stage of red atrophy, weight, 2 lbs., 15 ozs.

Kidneys: Slight fatty degeneration, otherwise normal; right weighing 6 ozs., left 4 ozs., same condition, small retention cyst near pelvis.

Gall-Bladder: Contained about two drachms of gall stones, weighing from 4 to 8 grains or more, supposed to be composed of cholesterin.

Intestines, uterus, ovaries, etc., normal.

Aorta: As far as examined had atheromatous and calcareous plates, the cœliac axis especially calcified.

Abdomen: Oedema of peritoneum, fluid of greenish color found in left abdominal cavity. The splenic artery was pushed out of its course by the growth and made to take a zig-zag course from its origin.

SEX IN BRAIN.

By HELEN H. GARDENER, of New York City.

[It is with pleasure that we are able to publish the gist of a paper read at the Woman's Council recently held in Washington. The talented young woman has bearded the lion in his den and apparently caused him to draw the den in after him. The investigations set on foot by Miss Gardener open up an entirely new field, in which we hope she will continue her work.—ED. INVEST.]

I was started on my work in this matter by several articles written by the boldest of the medical men in this country who is the leader of the medical party which claims to be opposed to the educational and political advancement of woman because of the inevitable injury to her physical constitution. The writings of such a man, aided by the circulation and prestige of the leading journals of the country, which publish them as authoritative, must inevitably influence school directors, voters and legislators and go far to crystallize the belief that facts are well known to the medical profession, with which it would be dangerous to trifle, when the truth is that the positive knowledge on the subject is not sufficient at this moment to form even an intelligent guess upon. In spite of this fact the well-known physician of whom I speak, Dr. Wm. A. Hammond, reiterates in

these articles all of the old, and adds one or two new arguments to prove woman should not be allowed to develop what brain she has, because she possesses very little and even that little is of inferior quality.

Of course all this is an old assumption and as such has been dealt with before. But Dr. Hammond now boldly asserts that these differences are easily discoverable by microscope and scales and that they are natural necessary sex differences.

He claims first, that woman's brain is inferior to man's in size and quality and therefore in possibility.

Second. That these marks of inferiority are natural and potential and not produced by environment.

Third. That they are easily recognizable in the brain mass itself.

Fourth. That in consequence of these natural organic and fundamental differences the female brain is incapable of, first, accuracy; second, sustained or abstract thought; third unbiased judgment (judicial fairness); fourth, the accomplishment of any real first-class or original work in the fields of science, art, politics, invention, or even literature. He points out the great danger to woman herself, and to the race as her children of allowing her to attempt those things for which the structure of her brain shows her to be incapacitated.

First, in the matter of size, the doctor concedes that the relative size and weight of the brain in the sexes is about the same, slightly in woman's favor, which he says does not count; although, when he finds this same difference between men, as between higher and lower races, he argued that it does count for a great deal.

But in the dilemma to which this seemed to reduce him in proving his case, he says: "Numerous observations show beyond doubt that the intellectual power does not depend upon the weight of the brain relative to that of the body so much as it depends upon absolute brain weight." Now, if this were the case, an elephant would

outthink any of us, and the whale would rank the greatest man on record, and have brain enough left to furnish material for a fair-sized female seminary.

The doctor says "the female brain, however, is not any smaller than that of man, but it is different in structure, and this fact involves much more asregards the character of the mental faculties than it does the element of size." Again he says: "Thus accurate measurements show that the anterior portion of the brain comprising the frontal lobes in which the highest intellectual faculty resides is much more developed in man than in woman, and this not only as regards its size but its convolutions also. Now, the part of the brain which is especially concerned in the evolution of mind is the brain matter, and this is increased or diminished in accordance with the number and complexity of the convolutions. The frontal lobes contain a greater amount of gray cortical matter than any other part of the brain, and they are, as we have seen, larger in man than in woman."

Accepting these sweeping statements for the moment—although many of them are questioned by the highest authority—would it not be fair to test the case as to whether this difference in adults is fundamental and prenatal or whether it is the result of outside artificial influences, by an appeal to the brain of infants.

If the brains of one hundred infants (each child weighing ten pounds) were examined, would the brains of fifty males be distinguishable from those of fifty females?

In other words, when the weight of the body, the age, and other conditions are the same, as to health, parentage, etc., and before the artificial means of development, educational stimulus and opportunity are applied to the one and withheld from the other, could the sex be determined by the difference in brain, weight, shape, size, quality, or convolutions? That would be the test. It was in pursuance of this idea that I caused the following questions to be submitted to a large number of the leading brain students of America, went my-

self somewhat into the study of anthropology, and collected certain bits of information as to just how much basis there is for all this cry about the difference in men's and women's brains.

First. Is it known to the medical profession whether in infants (of the same age, size health, and inheritance at birth) the quantity, quality, and specific gravity of the gray matter differs in the sexes? Does the relative amount of gray matter differ?

Second. Do the convolutions, form, actual amount of gray matter differ?

Third. Given the brain, only, of a number of infants of the same age, weight, etc., could the sex be determined by the difference in shape, quantity, quality, and convolutions?

Fourth. If so, are the differences more or less marked in infants than in adults? Is the frontal region of the brain larger and more developed in male than in female infants? Is the difference as marked as in adults?

Fifth. Does use, training, etc., develop gray matter, change texture, size, shape, etc., of the brain mass, or are these determined and fixed at birth? The same as to convolutions?

Sixth. Does use have to do with the location of the fissure of Rolando, or is that fixed at birth? In an uneducated man would there be as much of brain in front of this fissure as in a man of trained and developed mind?

Seventh. Does use or development of the mental powers change the specific gravity of the brain matter? Would it be the same in a great scholar as in a common laborer of the same general size and health?

Eighth. Is there unanimity of opinion on these questions? Are the facts known or only conjectured?

Ninth. If ten boys of the same weight, health, and general inheritance were taken in infancy and five of them subjected for fifty years to the conditions of a street or farm laborer, while the other five re-

ceived all the advantages of the life of a scholar, would the ten brains present the same relative likenesses at death as at birth? Would opportunity and mental exercise make a change in the brains of the five students that would be discoverable by microscope and scales?

In reply to the last question, the universal opinion was that it would be fair to assume that such difference would be perceptible. But one of the replies was that these points must necessarily remain only conjectural, based upon reason and analogy.

Is it not a fair presumption, since reason and analogy lead to this universally accepted theory as between man and man, that the same causes would produce the same results when applied between man and woman? Strangely enough, this is not held to be the case by these acute reasoners against our equality in brain.

But to illustrate once more the necessity of mentioning facts first and the reasons for them afterwards, I am assured by the most profound and capable students of these branches of science that if such differences exist in the brain of infants as are indicated by my questions, it is not known to those who make a specialty of brain study; but, upon the contrary, the differences between individuals of the same sex—in adults, at least—are known to be more marked than any that are known to exist between the sexes.

To illustrate, take the brains of the two poets, Byron and Dante. Byron's weighed 1,807 grms., while Dante's weighed only 1,320 grms., a difference of 487 grms.; or take two statesmen, Cromwell and Gambetta. Cromwell's brain weighed 2,210 grms., which, by the way, is the greatest on record—although Cuvier's is usually quoted as the largest, and a part of the weight of his was due to disease—while Gambetta's was only 1,241 grms., a difference of 969 grms. Surely it would not be held because of this that Gambetta and Dante should have been denied the educational and other advantages which were the natural right of Byron and Cromwell.

Yet it is upon this very ground that it is proposed to deny women equal advantages and opportunities, although the difference in brain weight between man and woman is only said to be 100 grms., and even this does not allow for difference in body weight, and is based upon a system of averages, which is neither complete nor accurate.

There is then not only no proof that the sex of infants could be distinguished by their brains; but all of the evidence which does exist on this subject is wholly against the assumption.

Up to this point in my investigation I learned only what I had fully expected to learn. At the next step, and in connection with it, I met with information which seems to me to offer an opportunity for reflection upon the matter of mental—not to say verbal—accuracy in the sex which does not wear "bangs." In the papers referred to, Dr. Hammond asserted, and no male voice or pen has seen fit to publicly correct him, that "it is only necessary to compare an average male with an average female brain to perceive at once how numerous and striking are the differences existing between them. He then submits a formidable list of striking differences which includes these: "The male brain is larger, its vertical and transverse diameters are greater proportionally, the shape is quite different, the convolutions are more intricate, the sulci deeper, the secondary fissures more numerous, and the gray matter of the corresponding parts of the brain decidedly thicker."

But as if all these were not enough to enable the merest novice to distinguish the one from the other, even if he were near-sighted; he offers these reinforcements: "It is quite certain, as the observations of the writer show, that the specific gravity of both the white and gray matter of the brain is greater in man than in woman." Of this point this is what the leading brain anatomist in America wrote me: "The only article recognized by the profession as important, and of recent date, which takes this theory as a working basis, is by Morselli, and he is compelled to make the sinister admission, while asserting

that the specific gravity is less in the female, that with old age and with insanity the specific gravity increases."

But to finally clinch his argument, Dr. Hammond continues: "The question is, therefore, not so much that of quantity" (which appears to collide with his statement that it was the "absolute brain weight which was the sublime test") "as it is of quality. The brain of woman is different from that of man in structure."

Again I applied my test. Did all this difference of structure and quality appear in the infant or only in the adult brains? Since it is held that these very differences are the ones produced by education, and properly diversified mental stimulus—as between man and man—is it not fair to assume that like causes produce like results as between man and woman?

Since woman has never had the advantages of these brain developing processes, is it not fair to assume, if all these differences do exist, that it is less a matter of natural and characteristic inferiority than of environment and opportunity, unless it exists in the same ratio in infants?

That would be the test as to whether these are natural, necessary, prenatal sex characteristics, or whether they are developed by external circumstances and environment. The physical sex characteristics, which are natural, are as readily distinguished at birth as at maturity.

But after a woman's waist and brain are put into tight laces and shaped to fit the fashion, it is a rather poor time to judge of her natural figure, either physical or mental. There was but one reply to my questions. It was this: No such test has ever been made with the brains of infants. It would be impossible to distinguish the male from the female child by these "radical, natural, easily discovered differences" in brain. I hold then, that the inference was perfectly legitimate that the great and numerous differences in the brains of adults were not natural, prenatal, and necessary; but that it was cer-

tainly fair to assume them to be producible, by outside measures or environment; and that it could be no more natural nor desirable, for the digestive organs and the brain of one sex to be decreased and deformed by pressure than it is for those of the other.

But I confess I was wholly unprepared for the final result of my last question and argument. I discovered that these differences are not known to exist in infants, and that in spite of all the talk, and the absolute statements to the contrary, in a like number of adults' brains such differences are not only not to be perceived at once, but that if Dr. Hammond or anybody else will agree to allow me to furnish him with twenty well-preserved adult brains, to be marked in cipher, he will find that his "numerous, striking, and easily perceived" differences will not appear with any relation to sex, so far as is known at the present time. I made this offer to him through the *Popular Science Monthly* some six months ago. Up to date the twenty brains I offered him to try on have not been called for.

Upon the contrary there will be found greater difference between individuals of the same sex than any known to exist between the sexes in any and all of these tests. That, in the main, since women weigh less than men, it would be pretty safe to guess that most of the lighter brains belonged to the women, but that this test would prove wrong in many cases, and that the other tests would fail utterly.

I made another discovery; it was this: The brain of no remarkable woman has ever been examined.

Woman is ticketed to fit the hospital subjects and tramps, the unfortunates whose brains fall into the hands of the profession, as it were, by mere accident; while man is represented by the brains of the Cromwells, Cuviers, Byrons and Spurzheims. By this method the average of men's brains is carried to its highest level; that of women is kept at its lowest, and even then there is only claimed 100 grammes difference.

It is on such statistics as this, it is with such dissimilar material, that they and we are judged.

Finally, I discovered that there is absolutely no definite information on the subject now in the hands or books of the medical profession which can justify the least show of dogmatism in the matter.

This being the case, perhaps it will be just as well for women to take a hand in the future investigations and statements themselves, and I sincerely hope that the brains of some of our able women may be preserved and examined by honest brain students, so that we may hereafter have our Cuviers and Websters and Cromwells.—*The Woman's Tribune.*

ON REFLEX-ACTION UPON THE RESPIRATION FROM THE NASAL MUCOUS MEMBRANE.

Dr. George Sanderman, of Berlin.
Translated by W. Y. Cowl, M.D., New York.

According to the observations of Voltolini, B. Fraenkel, Hack and others, there is an indubitable connection between affections of the nasal mucous membrane and attacks of spasmodic asthma. These attacks are characterized by a short and forcible respiration with a low position of the diaphragm, while the expiration is markedly long and difficult. In order to explain this connection Krause and others considered it necessary to refer to the stoppage of breathing in expiration incited from the nasal mucous membrane. If this could account merely for the slowing of the expiration, the ground for the lowered diaphragm remains unclear.

Every intrusion in the domain of the nose must come in contact with its function as the way for the respired air.

Before studying, therefore, the reflex relations between the nose

and respiration, it is best to exclude the purely mechanical influence; that is, to establish how far stenosis of the nasal cavities gave rise to changes in the performance of respiration.

For while the clinical picture of nasal stenosis, which is produced by the most manifold pathological affections of the nose, is sufficiently described by Kussmaul and others, concerning the matter in hand, there is, until now, no experimental work before us. The requisite conditions of nasal breathing may be present in the vicarious respiration through the mouth, but this does not permit the results of researches upon stenosis of the deeper air-passages to be immediately applied to them.

The simplest experiment—tamponade of the nostrils of a rabbit with cotton, showed that the stoppage of the nose has in these animals a profound effect. Although one would suppose that breathing by the mouth would suffice for the needs of the animal, they nevertheless die within 4 to 8 days without one's being able to make the inflammatory appearances in the nose—as a consequence of the tamponade—answerable for the death.

If we observe the respiration of the animal we notice that it is deepened and prolonged with an increased action of the respiratory muscles. It is a complete picture of stenotic breathing, although the animal makes use of the mouth.

According to the researches of Metzger and Donders (*i.e.*, in the normal condition) the under jaw is firmly held against the upper by the pressure of the external air, while the tongue is closely applied to the hard palate. This is the case in the rabbit. The consequence is, that also in the vicarious respiration the tongue remains against the upper jaw, and forms both on inspiration and expiration a valuable obstruction, which is only sprung open at the height of inspiration and expiration, in order to permit the passage of air.

We see an exemplification of the same under analogous condi-

tions in the new-born infant and in sleeping individuals, when the nares are stopped.

In order to obtain a graphic representation of the matter, I tracheotomized a rabbit and inserted a (threeway) tracheal canula. The animal was then placed in a box, provided with a movable side-wall closing air-tight, and a tube communicating through the cover with the interior.

The head and neck of the animal lay without the hermetically sealed box, while the tracheal canula was connected with a registering drum (*i.e.*, Morey's tambour enregistrem) in order to show the side pressure of the respired air, and the tube from the box connected with Gad's Seroplethysmograph in order to write the volume curve of respiration.

It then appeared, that with a stopped nose, whilst the volume curve varied nothing from the normal, the changes of pressure in the respiratory passages became very considerable.

Corresponding to the latter the respiratory variations in the blood-pressure become excessive.

If in accordance with the above, we observe frequently in man, a momentary dyspnœa with obstructed nares the cause must be in a valve-like obstruction by means of the tongue. A mechanical explanation of those typical attacks of asthma is not afforded.

We come now to the nervous relations of the nasal mucous membrane to respiration.

The familiar typical respiratory reflexes are sneezing, the nasal cough and the expiratory halt.

The halt at the end of expiration first described by Holmgren and by Falek has been experimentally studied by Kratschmar. He found that in the rabbit, by blowing vapors, such as tobacco smoke, into the nose, a prolonged halt resulted at the end of expiration with closure of the glottis, diminution of the frequency of the pulse and at the same time increase of the blood-pressure.

Gad and Wegele have shown that in this reflex there is a genuine inhibition by the nervous centers; for a respiratory pause also occurs, if in the rabbit the spinal cord be cut through at the level of the seventh cervical vertebra, thus excluding the expiratory muscles.

Wholly different from this inhibitory action is the sneeze-reflex, which is called forth by the excitation of tickling in the nose. By self-observation this presents itself as a deep inspiration with a then following occlusion of the naso-pharynx by the veil of the palate, and of the mouth by opposition of the tongue against the hard palate, which is thereupon broken through by a conjoined expiration and the compressed air emptied through the nose, and thus the irritating foreign body removed from its cavity.

The entire inspiratory musculature takes part in the introductory inspiration in sneezing, but the diaphragm is the chief partaker.

If we so diminish the tickling excitation,—although difficult to execute,—that we but lightly touch the mucous membrane, we have the inspiratory effect, whilst the forcible expiration may not occur.

Neither in cats nor in rabbits have I been able to excite cough from the nose. If we compare these two reflex actions with each other, we perceive the difference between them in the depth of the inspiration which in coughing is much smaller, and further in the valve-like occlusion which is effected in sneezing through the veil of the palate, and in coughing through the glottis.

Up to this point I have spoken entirely of irritation of the nasal mucous membrane. It is now before us to lay open the nose, in order to ascertain whether the reflexes discussed are incited through the whole or only a part of the nasal mucous membrane. If we touch this surface which now lies free before us, with a bristle or feather, going from behind forward, we perceive that a reflex upon the respiration is first occasioned, when we reach the region of the nasal entrance. This zone of excitation begins about in the region of the anterior end of the inferior turbinated bone, which presents

in the rabbit a peculiar formation. To it belongs further, the corresponding part of the septum, as well as especially of the nasal roof and finally of the floor of the nasal cavity, although here the excitability is weaker. From the mucous membrane of the antrum of Highmore the respiratory reflex is not to be occasioned. The same localization is to be found in the cat.

If we extirpate this zone of excitability in the rabbit the respiratory reflexes are no longer to be obtained. On considering this region in the rabbit more precisely, we are struck by a peculiar pad attached to the anterior end of the inferior turbinated bone, which as the microscopical examination reveals, consists of a movable cartilage covered with mucous membrane rich in glands, and which by an inserted muscle is drawn to the nasal septum, in which a depression indicates the place in which this pad comes to lie.

We find therefore in the rabbit a double mechanism for occluding the usual cavity, of which the outer acts by the nasal alæ and the inner by this pad.

That this part of the nasal cavity forms the chief guard for the deeper respiratory passages, is farther shown by the circumstance, that tickling of this spot calls forth a profuse secretion of water—clear stringy mucus, such as I have not observed with other parts of the nasal mucous membrane. The secretion of tears is also to be excited hereby.

Touch experiments, which I have carried out in a number of men with slight excitatory tickling by contact with bristles, showed me that here two zones of excitability exist, of which the anterior takes in the region of the front end of the inferior and middle turbinated bones, as well as the corresponding part of the septum, while the latter is found at the choanœ and includes the posterior ends of the inferior and middle turbinated bones and the corresponding part of the septum.

If we now represent to ourselves the innervation of the nasal

mucous membrane, which is effected through the first and second branch of the fifth, it appears that this anterior zone of excitability is essentially supplied by the nervus ethmoidalis, a branch of the naso-ciliaris.

If one excites the ethmoidalis with an induced current of medium strength sneezing promptly follows.

This fact, noteworthy of itself, yields moreover a further interest, in that it contributes to the affirmative solution of the disputed question, whether upon excitation of a nerve-stem co-ordinated reflexes will follow.

The conclusion which these researches permit, is that the n. ethmoidalis is *par excellence* the nerve for sneezing, while excitation of the n. infra-orbitalis brings a halt in respiration, either in inspiration or expiration, and a constant closure of the lids.

Recounting briefly the results of our investigation, we have to regard as established :

1. The mouth-breathing which occurs in the new-born with nasal stenosis, and in later years during sleep, or in certain animals, is to be considered as a form of stenotic respiration, and must therefore entail in the course of time all the consequences of stenotic breathing, under which I especially class emphysema.

2. In the vasal mucous membrane there exist definite zones of excitation from which alone respiratory reflexes proceed. In the rabbit and cat there are such at the nasal entrance : in man upon the ant. and post. ends of the middle and inferior turbinated bones and the corresponding part of the septum.

3. According to the kind and strength of the excitation, we obtain, either an inhibitory or a sneeze-reflex : the former shows itself in its mildest form as a slowing of the respiration, further as a halt in either phase of the same, and with strong excitation as a halt in expiration.

4. The sneeze-reflex is especially transmitted by the nervus ethmoidalis.

5. The sneeze-reflex may be abortive in that there may result an inspiratory distension of the chest,—often continued,—without a following forcible expiration.

In particular, the last fact, that from the nasal mucous membrane, upon slight excitation, such as daily greets the nose, inspiration—tetanus especially of the diaphragm—is to be incited appears to be of pre-eminent importance for pathology, for while, until the present, a satisfactory explanation was not to be given of those attacks of asthma called nasal, which consist of short rapid inspirations and strenuous expirations with lowered position of the diaphragm ; we now approach an explanation of this condition, if we consider those inspiratory spasms resulting from tickling irritation in the nose as the physiological prototype of the pathological picture.

If we have to do with irritant conditions in the nose, which call forth inspiratory tetanus, so will the inspiration be only short and energetic, while the expiration, which has to overcome the inspiratory spasm, requires a stronger action of the expiratory musculature : the expiratory phase will be strenuous and lengthened.

The possibility likewise of an inhibitory reflex from the nose, lengthening still more the already extended expiration, is not to be denied.

This research supplies consequently a contribution to the old question, whether spasmodic asthma, which can be occasioned from out the most varied points of the body, is to be referred chiefly to spasm of the bronchial muscles or of the diaphragm. For the nasal asthma, at least, an essential pre-eminence of diaphragmatic spasm cannot he denied.

Finally, it is not to be overlooked that a fundamental cause of the volume of pulmonum auctum, which in its etiology is so dark in many cases, lies in irritant conditions of the nose, as well as in nasal stenosis, although not at once obvious.

Voltolini has indeed already shown a connection between emphysema and diseases of the nose.

While previous to this, an essential role has been ascribed to cough in the development of emphysema, I believe that the in nowise so seldom sneeze-reflex may be drawn to the explanation of diminished lung elasticity with even as much justification. For since sneezing sets in with a far deeper inspiration than cough, so is the volume of the compressed air greater, and therefore also the extending action of the same a stronger one. Tonic contraction of the diaphragm is also able to contribute to such an extension of the elastic fibres of the lungs.

I refrain from going into a discussion of the clinical supports of these conditions, which are at hand.

Society and Hospital Notes.

THE AMERICAN INSTITUTE.

The coming meeting of the American Institute of Homœopathy, gives promise of being one of the most profitable and interesting held in the history of this organization. Some of the most prominent physicians in all sections of the country have signified their intention of being present, and many of them will read papers before the different bureaus.

Some dissatisfaction has been expressed by the profession in the West because of the fact that the Institute has met three consecutive times in New York State. This has been met by a ringing letter from President Cowperthwaite—himself, as our readers know, a Western man, giving unanswerable reasons for the decision of the Institute in this particular. He calls attention to the fact that though a National organization the membership comes in disproportionate numbers from the East, that meetings in the West have been poorly

attended by Western physicians, and have been rarely successful, and furthermore that the accommodations, excepting in large cities, are inadequate for such an immense society as the Institute has grown to be.

He urges that the attendance from the West be sufficiently large to warrant the selection of Lake Minnetonka for the meeting in 1889.

In this connection the following letter from the general secretary of the Institute will be read with interest.

EDITOR PHYSICIANS AND SURGEONS' INVESTIGATOR. — The American Institute Session will be held at Niagara Falls, N. Y., beginning Monday evening, June 25, and closing Friday noon, June 29 The General Sessions, the Sectional Meetings and the meetings of committees, will be held in the new Orphans Park Theatre, contiguous to the large hotels.

Mr. A. H. Gluck, of the International Hotel, will entertain physicians and friends at the rate of three dollars per day. Carriages can be obtained at reasonable and fixed rates. The Committee on Railroad Fares has secured concessions under which those who pay full fare going, can obtain return tickets at one-third fare. But to secure this reduction the rules of the Railway Association must be followed implicitly. The rules will be published in the Institute's Annual Circular.

About seventy papers will be presented at the session, embracing a wide variety of medical and surgical topics, and sure to furnish subjects of special and absorbing interest to all who may attend.

A grand excursion to Fort Niagara, at the mouth of the river, has been arranged for Tuesday evening. The excursionists will enjoy a fine view of the Falls, the Gorge, the Rapids and the Whirlpool, from open "observation cars,"—first by twilight and then by moonlight, —and a steamboat ride, with a collation and music, on the quiet river below.

PEMBERTON DUDLEY, M.D., General Secretary,
S. W. corner Fifteenth and Master streets., Philadelphia.

The

Physicians and Surgeons' Investigator.

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The Editors individually assume full responsibility for and are to be credited with all connected with the collection and presentation of matter in their respective departments, but *are not responsible for the opinions of contributors.*

BUFFALO, N. Y., JUNE 15, 1888.

TWO BOOKS.

The interesting volume on the Language of Medicine, reviewed elsewhere in this number, suggests one of the commonest deficiencies of medical men.

Accuracy of language means accuracy of thought; and *per contra* the careless use of words—a disregard of the niceties and shades of meaning—leads to, if it does not indicate, slovenly habits of thought. It has been said that a single provincialism in the drawing-room will betray a man's origin; and not less will the mispronunciation of a Greek or Latin derivative in the office prove a man uneducated, no matter what position he may occupy. "A well educated gentleman," says Ruskin, "may not know many languages; may have read very few books. But whatever language he knows he knows precisely; whatever word he pronounces he pronounces rightly; and above all he is learned in the *peerage* of words."

Many physicians have not had the advantages of a liberal education, but the deficiencies will surely be far less apparent if scrupu-

lous care be exercised in the selection of terms and the pronunciation of words, especially of those used in medicine. "Nothing is more rare than the use of a word in its right meaning," said one of the greatest of German authors, and alas! that it should be true. When we reflect, what dignity and power cling to the speech of a man who makes use only of "words fitly chosen."

Speaking of books suggests another in our review column, a "Repertory of Gonorrhœa."

The author supplements his medical title with the cabalistic letters (presumably a degree) I. H. A. They probably mean, however, the International Hahnemannian Association.

How a society containing so many bright and scholarly men—and its president Prof. Kent is notably such—can allow such stuff to appear under its *vise*, and how a firm noted for the excellence of its publications can put it in print, is a problem for the curious.

Special repertories are always of questionable value, for at best they merely suggest the remedy which must be determined by the totality of symptoms.

It is not a question whether an infectious urethritis can be most readily cured by internal medication, although our present knowledge of the gonococcus would seem to warrant its discussion; but a book written by a physician for physicians must at least be founded on common sense. And while we respect the writer's attempt to give us a pure therapia we must condemn an effort which serves only to render ridiculous the school of which he is a member. One hundred and thirty-five remedies suggested for the cure of this disease reminds one of the fable of the fox and the hounds—and we wonder if the prescriber has not an embarrassment of riches—especially when the list includes such drugs as anatherum muriaticum, amoracea sativa, Lippespringe, etc. Words are made to represent ideas—when such discriminations as stinging in the urethra calls for capsi-

cum and burning in the same locality mercurius—when a stitch in the urethra indicates graphites, and a small stitch petroleum—such stuff may appeal to the elect, but to the plain, common-sense pathologist it reads wonderfully like arrant nonsense.

Book Notices.

A good book justifies our theory of personal supremacy, keeping this fresh in the memory and perennial.—A. BRONSON ALCOTT.

Perhaps half a dozen books come to our notice during a year that are really worthy of a careful perusal. Indeed, that would be an unusually large average. When, therefore, such a one comes, it seems to merit more than passing comment.

It is strange that nearly every celebrated author finds it necessary to write several volumes when every thing new and good that he had to say might have been compressed within two very narrow covers. We grow weary with the vain repetitions with which book-makers are constantly flooding us, and it is a genuine pleasure to meet with a book that not only has a distinct *raison d'être*, but which is good throughout and which contains no superfluous matter. Such a book is Dr. Campbell's Language of Medicine.* The book, as its name implies, is a study of the etymology of medical terms. The first part, consisting of the "Origin of the Language of Medicine," treats of the "birth, life, and death of words." The second part treats of the Latin, and the third part of the Greek element in the language, and enough of both languages is given for a ready understanding of their derivatives in medical use. The fourth part is devoted to the elements derived from modern languages.

* *The Language of Medicine.* By F. R. Campbell, A.M., M.D. Pp. 318. 8vo, Cloth. New York: D. Appleton & Co., 1888.

The writer is a philologist of exceptional ability, and the book in the hands of a student of medicine can not but prove of value.

The printer's work, as is usual in all of Appleton's publications, is admirable.

PATHOGENETIC AND CLINICAL REPERTORY OF PROMINENT SYMPTOMS OF THE HEAD. By C. Neidhard, M.D. Pp. 188, 8vo. Cloth $1.50. Phila.: F. E. Boericke.

This repertory was originally compiled from Allen's Encyclopedia, for the personal reference of the author. Finding the usefulness of the work in daily practice, it was gradually brought into shape for publication. The verified symptoms which can be relied upon are printed in bold type, and are the drug "key-notes." The results of the author's own experience are printed in lighter type, and give what we all seek, the results obtained from remedies in the practice of a careful prescriber. These are clinical data, and are kernels amongst the mass of husks which fills our materia medica to repletion. A mere collection and systematic arrangement of symptoms, which may or may not be characteristic of the drugs they represent, can be of little value; but the outcome of the ripe experience of a careful observer can not fail to be of benefit.

A REPERTORY of GONORRHŒA, WITH CONCOMITANT SYMPTOMS OF THE GENITO-URINARY ORGANS. By Samuel A. Kimball, M.D., I.H.A. Pp. 53, 8vo, cloth. Boston: Otis Clapp & Son, 1888.

A repertory is always a convenient volume to have at hand, and this little book appears to have been compiled with unusual care and painstaking. With the ideas of the author as expressed in the preface, we disagree most decidedly. We do not believe that gonorrhœa "can only be *cured* by strictly homœopathic treatment," or that when so treated "it is never followed by stricture, enlarged prostate, or by diseases of the bladder." Gonorrhœa may be produced

by gonococci and suppuration by staphylococcus pyogenes, or they may both be caused by poisons or local irritants of a different nature ; but no surgeon would fail to open a suppurating wound and make it antiseptic, even though he afterward gave the indicated remedy. If then we can render the virus of the disease innocuous and so limit its action, is it not better than the more tedious method of rendering the soil invulnerable to its attacks by internal medication ?

But this repertory is homœopathic, and fortunately in homœopathy the plan of treatment does not depend upon the theories of the prescriber.

News and Miscellany.

—The combined villages of Arcade and Yorkshire, N.Y., need a homœopathic doctor ; first class opening for a pushing young man.

—Lycopus is an excellent remedy when the heart's impulse is feeble, the patient nervous, irritable and extremities cold. Remember it in Exophthalmic Goitre.

—Rhus for sleeplessness due to aching legs.

—Conium when legs are cold and torpid.

—Naja sleeplessness due to constant coughing.

—Raphanus 1x. Sexual insomnia, immoderate sexual desire.

—Fluoric acid.—Hob-nailed liver of drunkards. —*Cal. Homo.*

—**The American Institute.**—Members and others desiring to attend the next meeting at Niagara, June 25–29, will be returned for one-third fare, provided they pay full fare going and procure a certificate from the agent at point of starting. Non-members residing in the territory of the Trunk lines, i.e., East of Niagara Falls, Buf-

falo, Salamanca, Pittsburgh, Wheeling and Parkersburg, can have certificates sent them by applying to

H. C. ALLEN,
Chairman Committee on Railroads, Ann Arbor, Mich.

—**More Books Given Away.**—The Homœopathic Medical Society of the State of New York still offer a few incomplete sets of their Transactions at ($1.25) one dollar and twenty-five cents; parties wishing any odd volume or year can obtain them by the payment of the simple item of postage. The postage on the several volumes is as follows, viz.: For 1870, 27 cents; 1871, 22; 1872, 32; 1873–4, 20; 1876–7, 17; 1878, 21; 1879, 15; 1880–1, 22; 1884, 20; 1885, 20; 1886, 22; 1887, 22.

Orders for odd volumes may be sent to Edward S. Coburn, M.D., Troy, N. Y., and for sets to A. B. Norton, M.D., 152 West 34th Street, New York.

FOR SALE AND EXCHANGE.

For Sale.—A $6000 homœopathic practice in a town of 12,000, State of Georgia. Must leave on account of wife's health. A goood opening and cheap. Address J. A. TIGNER, M.D., Rome, Ga.

A physician in good town in Western New York wishes to sell out (on account of ill health), or will make an arrangement with a good homœopath to take business for six months. MANAGING ED. INVESTIGATOR.

Partner Wanted.—In an Indiana town of 1000 inhabitants. Will retire in a year leaving partner in full control. $1000 necessary to purchase half office furniture, fixtures and stock of medicines. Address, N. G. S., this office.

For Sale.—A good practice in Fairfield, Solano Co., California. Address H. L. BRADLEY, M.D.

For Sale.—A good city practice in Illinois, of about $2500. A good chance for growth. Will sell cheap. Address H. F., this office.

For Sale.—A good paying practice, in a live town of 1000, with good surrounding country. Established six years. Address P. O. Box 72, Andover, Ohio.

For Sale—A good paying practice in Watkins, N. Y., to a good man. Will sell or rent house, offices, barn and practice, and give purchaser a good introduction. At a bargain. Address W. C., this office.